National Institute of Environmental Health Sciences

Recent warming by latitude associated with increased length of ragweed pollen season in central North America

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Abstract:

A fundamental aspect of climate change is the potential shifts in flowering phenology and pollen initiation associated with milder winters and warmer seasonal air temperature. Earlier floral anthesis has been suggested, in turn, to have a role in human disease by increasing time of exposure to pollen that causes allergic rhinitis and related asthma. However, earlier floral initiation does not necessarily alter the temporal duration of the pollen season, and, to date, no consistent continental trend in pollen season length has been demonstrated. Here we report that duration of the ragweed (Ambrosia spp.) pollen season has been increasing in recent decades as a function of latitude in North America. Latitudinal effects on increasing season length were associated primarily with a delay in first frost of the fall season and lengthening of the frost free period. Overall, these data indicate a significant increase in the length of the ragweed pollen season by as much as 13-27 d at latitudes above ~44 degrees N since 1995. This is consistent with recent Intergovernmental Panel on Climate Change projections regarding enhanced warming as a function of latitude. If similar warming trends accompany long-term climate change, greater exposure times to seasonal allergens may occur with subsequent effects on public health.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3053965

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Policymaker

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Temperature

Air Pollution: Allergens

Geographic Feature: ☑

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States, United States

Non-United States: Non-U.S. North America

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Respiratory Effect

Respiratory Effect: Asthma, Upper Respiratory Allergy

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content